

REMARKS

Claims 1, 3-6, 8-15 and 17-21 are pending in the present Application. Claim 12 has been canceled, claims 6, 13-14, 17, 19, and 21 have been amended, leaving claims 1, 3-6, 8-11, 13-15, and 17-21 for consideration upon entry of the present Amendment. No new matter has been introduced by these amendments.

Claim 6 has been amended to depend from claim 1. Claims 13-14 and 19 have been amended to depend from claim 21. Claims 17 and 21 have been amended to contain the subject matter of claim 12.

Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Courtesy Call

The Applicants wish to extend their appreciation to Ms. Marie Chery for informing the attorney of record of the outstanding Office Action for the present application. Attorney Roberta Pelletier called Ms. Chery on December 27, 2007 informing her of the forthcoming Response and Amendment.

Claim Objection

Claim 12 has been objected to as containing a misspelling of the term “propylene”. The objection is moot as the claim has been canceled.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 6 and 19 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, claim 6 is alleged to be indefinite as it does not further limit the claim from which it depends. Claim 19 depends from claim 16 which has been canceled.

Claim 6 has been amended to depend from pending claim 1. Claim 19 has been amended to depend from pending claim 21. Reconsideration and removal of the § 112

rejections are respectfully requested.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1, 3-4, 11, and 17-21 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 2002/0045027 to Sawada et al. (hereinafter “Sawada”). (Office Action dated May 3, 2007, page 3) Applicants respectfully traverse this rejection.

Sawada generally discloses an anti-fog resin sheet comprising “a resin sheet and an anti-fog coating film formed on the surface of the resin sheet, wherein the anti-fog coating film is composed of a nonionic surfactant (A) and a metal carboxylate salt compound (B) and the metal carboxylate salt compound (B) has a hydrate forming ability and is in an amorphous state. . . . The molded article is produced by molding the anti-fog resin sheet.” (Sawada, Abstract) The concept of a film of an anti-fog coating on the surface of a sheet is repeated throughout the application. (See, Sawada, paragraphs [0010], [0016], and [0034] “Such an anti-fog resin sheet can be produced by coating a resin sheet with the anti-fog agent”) Exemplary methods of coating the surface of the resin sheet include using a spray coater, roll coater, gravure coater, knife coater, air knife coater, and rotor dampening machine. (Sawada, paragraphs [0035]-[0036])

The instant claims, on the other hand, require the blending an aromatic thermoplastic polymer and an anti-fog additive to form a blend, molding the blend to form an article, and subjecting the article to an active conditioning step of exposing the aromatic thermoplastic polymer article to an aqueous environment sufficient to result in a fog resistant aromatic thermoplastic polymer article.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Barient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

Sawada is directed to applying an anti-fog coating film onto a resin sheet rather than incorporating an anti-fog agent within the polymer itself in the form of a blend. As each of the claims require the blending of an aromatic thermoplastic polymer and an anti-fog additive to form a blend, Sawada does not anticipate the claims as the reference fails to teach each and every claim limitation. Accordingly, reconsideration and removal of the rejections are

respectfully requested.

Claims 19 and 21 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by WO 96/25451 to Hen et al. (hereinafter “Hen”) (Office Action dated May 3, 2007, page 4) Applicants respectfully traverse this rejection.

Hen is directed to a film having inherent anti-fog properties, and a method for making such a film wherein the film is made at least in part from a polyether polyamide block copolymer. (Hen, Summary of the Invention)

Claims 19 and 21 require the non-ionic anti-fog additive to be a polysiloxane-polyether copolymer, a poly(propylene glycol)-poly(ethylene glycol)-poly(propylene glycol), or a poly(ethylene glycol)-poly(propylene glycol)-poly(ethylene glycol). Hen does not teach this required limitation. Thus, reconsideration and removal of the rejection are respectfully respected.

Claims 1, 3-6, 8-12, and 17-21 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 5,877,254 to La Casse et al. (hereinafter “La Casse”) (Office Action dated May 3, 2007, page 4) Applicants respectfully traverse this rejection.

LaCasse is generally directed to scratch-resistant anti-fog coating compositions, methods for making the coating compositions, as well as methods of rendering a surface scratch-resistant and imparting anti-fog properties. The coating composition includes an isocyanate prepolymer, a hydrophilic polyol, and a hydroxyl bearing surfactant. (LaCasse, Col. 3, ll. 65 – Col. 4, ll. 3)

Independent claims 1, 17 and 21 require blending an aromatic thermoplastic polymer and an ionic or non-ionic anti-fog additive, molding the blend to form a thermoplastic article, and exposing the molded thermoplastic article to an aqueous environment, sufficient to result in a fog resistant aromatic thermoplastic polymer article. LaCasse does not teach such a method. Rather, LaCasse discloses preparing an aqueous coating solution comprising anti-fog additives. (LaCasse, Col. 6, ll. 39-67) La Casse then discloses applying the solution “to polycarbonate plastic lenses and cured in an oven at 125°C for 30 min.” (LaCasse, Col. 7, ll. 1-2) As described in Examples 1 through 5 of La Casse, the anti-fog properties of the

polycarbonate plastic lenses coated with the anti-fog solution are evaluated without any further processing. That is, the polycarbonate plastic lenses coated with the anti-fog solution had anti-fog properties due to the coating without exposing the polycarbonate plastic lenses coated with the mixed solution to an aqueous environment.

The Examiner asserts that a reasonable interpretation of the claims, LaCasse's teaching of a coating reads on the claims as indicated by claim 15. (Office Action dated May 3, 2007, page 5, first full paragraph) The Applicants respectfully disagree. The claims require blending an aromatic thermoplastic polymer and an anti-fog additive to form a blend and then the blend is molded to form an article. This process is not a coating process and does not result in a coating of the anti-fog additive on the surface of the polymer article. Rather, the anti-fog additive is throughout the matrix of the thermoplastic polymer. Such a limitation is not taught at all by LaCasse. The Applicants respectfully request reconsideration and removal of the rejections.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a), as allegedly obvious over Sawada in view of U.S. Patent No. 3,891,719 to Schirmer et al. ("Schirmer"). Applicants respectfully traverse this rejection.

Schirmer generally discloses thermoplastic molding compositions of a polycarbonate and a graft copolymer of styrene and acrylonitrile on an acrylic acid ester polymer. (Schirmer, Title)

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

As mentioned above, Sawada is directed to applying an anti-fog coating film onto a resin sheet rather than incorporating an anti-fog agent within the aromatic thermoplastic polymer itself to form a blend that is molded into an article, and the article exposed to an

aqueous environment to improve the anti-fog properties of the article. Thus, Sawada fails to teach or suggest blending of an aromatic thermoplastic polymer and an anti-fog additive to form a blend. Schirmer fails to supply the missing teaching. Accordingly, reconsideration and removal of the rejections are respectfully requested.

Claim 11 stands rejected under 35 U.S.C. § 103(a), as allegedly obvious over Hen. Claims 17 and 20 stand rejected under 35 U.S.C. § 103(a), as allegedly obvious over Hen in view of U.S. Patent No. 6,797,383 to Nishizawa et al. (“Nishizawa”).

As mentioned above, Hen fails to teach or suggest the use of a polysiloxane-polyether copolymer, a poly(propylene glycol)-poly(ethylene glycol)-poly(propylene glycol), or a poly(ethylene glycol)-poly(propylene glycol)-poly(ethylene glycol) as the non-ionic anti-fog additive. Nishizawa fails to supply the missing teaching. Thus, reconsideration and removal of the rejection are respectfully respected.

Claims 1, 3-6, 8-12, 15, and 17-21 stand rejected under 35 U.S.C. § 103(a), as allegedly obvious over LaCasse in view of U.S. Patent No. 3,048,263 to Sacks et al. (“Sacks”), U.S. Patent No. 6,225,391 to Parthasarathy et al. (“Parthasarathy”), U.S. Patent No. 3,433,653 to Smissen (“Smissen”), or Hen.

Sacks generally discloses prevention of fogging of polyolefin surfaces.

Parthasarathy generally discloses the production of a polyolefin film having anti-fog properties by adding an alkyl(polyether)siloxane compound to a composition comprising a polyolefin prior to formation of a film. (Parthasarathy, Summary of the Invention)

Smissen generally discloses an antifogging viewing glass made of a transparent cellulose acetate, cellulose butyrate or polyvinyl chloride plastic containing a vinyl sulfonic acid ester, which when contacted with water, is hydrolyzed and becomes a wetting agent. (Smissen, Abstract)

LaCasse fails to teach or suggest blending the claimed anti-fog additive with an aromatic thermoplastic and then molding the blend to form an anti-fog article. None of the other cited references teach or suggest the missing limitation. Particularly, Sacks and Parthasarathy are directed to polyolefin polymers, while Smissen is directed to cellulose

acetate, cellulose butyrate or polyvinyl chloride, none of which is an aromatic thermoplastic. Although Sacks, Parthasarathy and Smissen may teach using certain anti-fog additives in polyolefin and other non aromatic thermoplastics, it does not lead one of skill in the art to modify the teachings to use aromatic thermoplastics since none have been shown.

Furthermore, one of skill in the art would not expect success in replacing the nonaromatic thermoplastic polymers of Sacks, Parthasarathy and Smissen with the substrate materials of LaCasse for the following reasons. First, LaCasse only teaches success in adding anti-fog additive coatings onto an aromatic thermoplastic and not incorporating the anti-fog additive within the polymer itself. None of Sacks, Parthasarathy and Smissen lead one to believe success would be obtained by moving away from the nonaromatic polymers disclosed within the references. Secondly, aromatic thermoplastic polymers require high temperatures for melt blending and processing such as molding. Such high temperatures are more likely to cause degradation of additives included in the blend as opposed to lower temperatures, such as those used in processing nonaromatic polymers. Thus, one of skill in the art would be hesitant to move away from the polymer materials of Sacks, Parthasarathy, and Smissen to aromatic thermoplastics when looking to make a blend of anti-fog additive and polymer.

Finally, Hen does not provide the missing limitation as Hen is directed to a film having inherent anti-fog properties due to a polyether polyamide block copolymer. Hen does not lead one of skill in the art to use other anti-fog additives such as an ionic anti-fog additive or a polysiloxane-polyether copolymer, a poly(propylene glycol)-poly(ethylene glycol)-poly(propylene glycol), or a poly(ethylene glycol)-poly(propylene glycol)-poly(ethylene glycol) with an aromatic thermoplastic polymer to form a blend that is prepared into an article that is later provided improved anti-fog properties by exposure to an aqueous environment.

Reconsideration and removal of the rejections are respectfully requested.

Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a), as allegedly obvious over LaCasse in view of U.S. Patent No. 3,933,407 to Tu et al. ("Tu").

As mentioned above, LaCasse fails to teach or suggest blending an anti-fog additive with an aromatic thermoplastic and then molding the blend to form an anti-fog article.

Tu also fails to teach or suggest the missing limitation. Rather, Tu discloses an anti-

fog composition comprising the combination of (1) hydrophilic acrylate or methacrylate polymer, e.g., hydroxyethyl methacrylate polymer and (2) a siloxane-oxyalkylene block copolymer. (Tu, Col. 1, ll. 9-12) Tu discloses applying the anti-fogging composition to glass or plastic surfaces which are normally fogging. (Tu, Abstract) Tu does not disclose method for making a fog resistant thermoplastic article, comprising *blending* an aromatic thermoplastic polymer and an ionic or a non-ionic anti-fog additive to form a blend; *molding* the blend to form an aromatic thermoplastic polymer article; and *exposing* the aromatic thermoplastic polymer article to an aqueous environment sufficient to result in a fog resistant aromatic thermoplastic polymer article, wherein the exposing comprises exposing to steam, immersing in water, spraying with water, misting with water, or combinations comprising at least one of the foregoing. Tu, as indicated at Col. 10, ll. 39-67, Col. 11, ll. 1-67 and Tables I, II, and III discloses adding organosiloxane-oxyalkylene block copolymer to hydroxyalkyl acrylate or methacrylate polymer to form a solution and then coating a glass or plastic surface which is normally foggy with the solution. Thus, the plastic articles disclosed by Tu are not formed by blending an aromatic thermoplastic polymer and an ionic or a non-ionic anti-fog additive to form a blend and then molding the blend to form an aromatic thermoplastic polymer article. Rather, the plastic articles are made by *coating* the article with a solution that contains organosiloxane-oxyalkylene block copolymer. Furthermore, the coating solution of Tu does not contain an aromatic thermoplastic polymer. Nor does Tu disclose blending an aromatic thermoplastic polymer and an ionic or a non-ionic anti-fog additive to form a blend; molding the blend to form an aromatic thermoplastic polymer article; and exposing the aromatic thermoplastic polymer article to an aqueous environment sufficient to result in a fog resistant aromatic thermoplastic polymer article. For these reasons at least, Tu combined with LaCasse do not render the instant claims obvious. Applicants respectfully request reconsideration and removal of the rejections.

Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a), as allegedly obvious over LaCasse in view of Sacks and any of Parthasarathy, Smissen, or Hen in view of Tu.

Claims 13 and 14 ultimately depend from claim 21. As discussed previously for the rejection over claim 21, none of LaCasse, Sacks, Parthasarathy, Smissen, or Hen, alone or

combined, leads one of skill in the art to expect success in using an anti-fog additive in a blend of an aromatic thermoplastic polymer and molding the blend into an article having improved anti-fog properties after exposure to an aqueous environment. It is noted that Tu is directed to an anti-fog coating as is LaCasse. Sacks, Parthasarathy and Smissen are directed to non-aromatic polymers, while Hen is directed to specific polyether polyamide block copolymer films having inherent anti-fog properties. Based on the teachings of using an anti-fog coating on top of an aromatic thermoplastic with the teachings of using an anti-fog agent in a nonaromatic polymer, one of skill in the art would not expect success in incorporating the anti-fog additive into the aromatic thermoplastic. The reasons have been outlined above including the high processing and molding temperatures often used in aromatic thermoplastics unlike other nonaromatic polymers. Reconsideration and removal of the rejections is respectfully requested.

It is believed that the foregoing remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Response or otherwise, please charge them to Deposit Account No. 07-0893.

Respectfully submitted,

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